

WHAT IS CLAIMED IS:

1. A method of communications by making an access from a first communication device located outside a home network to a second communication device on the home network, the method comprising:

transmitting a prescribed message from the first communication device to an access server device corresponding to a home gateway device provided at the home network by specifying an access number/address corresponding to the home gateway device;

carrying out an authentication procedure for authenticating the first communication device according to a prescribed authentication method between the access server device and the first communication device upon receiving the prescribed message at the access server device;

transferring the prescribed message through a prescribed access network from the access server device to the home gateway device corresponding to the access number/address specified by the prescribed message, when the authentication procedure is successfully completed; and

transferring the prescribed message from the home gateway device to the second communication device through the home network after converting the prescribed message according to a protocol supported by the second communication device, when the prescribed message is received by the home gateway device from the access server device which is registered at the home gateway device in advance.

2. The method of claim 1, further comprising:

transferring information received from the second communication device after transferring the prescribed message to the second communication device, from the home

gateway device to the first communication device through the access server device after applying a protocol conversion to the information.

- 5 3. A method of communications by making an access from a communication device located outside a home network to the home network, the method comprising:

transmitting a prescribed message from the communication device to an access server device

- 10 corresponding to a home gateway device provided at the home network by specifying an access number/address corresponding to the home gateway device;

carrying out an authentication procedure for authenticating the communication device according to a

- 15 prescribed authentication method between the access server device and the communication device upon receiving the prescribed message at the access server device;

transferring the prescribed message through a prescribed access network from the access server device to the home gateway device corresponding to the access number/address specified by the prescribed message, when the authentication procedure is successfully completed; and

- 20 transferring a home page containing information related to the home network which is selected according to the prescribed message, from the home gateway device to the communication device through the the access server device, when the prescribed message is received by the home gateway device from the access server device which is registered at the home gateway device in advance.

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4. An access server device for carrying out access control with respect to a home gateway device of a registered home network, comprising:

- 35 a memory unit configured to store an authentication table registering in correspondence a first access number

to be used in accessing the home gateway device which is a target of the access control by the access server device, a second access number to be used in accessing the access server device at a time of transmitting a prescribed
5 message from a first communication device located outside the registered home network at which the home gateway device is provided, to the home gateway device or a second communication device on the registered home network, and an authentication method to be used in an authentication
10 procedure for authenticating the first communication device between the access server device and the first communication device;

a first interface unit configured to receive the prescribed message from the first communication device by
15 using the second access number;

a processing unit configured to carry out the authentication procedure between the access server device and the first communication device using the authentication method obtained by referring to the authentication table
20 according to the second access number used in the prescribed message; and

a second interface unit configured to transfer the prescribed message to the home gateway device through a prescribed access network by using the first access number
25 obtained by referring to the authentication table according to the second access number used in the prescribed message, when the authentication procedure is successfully completed.

30 5. The access server device of claim 4, wherein:
the second interface unit also receives information from the home gateway device after transferring the prescribed message to the home gateway device; and
the first interface unit also transmits the
35 information received by the second interface unit to the

first communication device.

6. The access server device of claim 5, wherein the information represents a home page containing contents
5 regarding devices connected to the registered home network which is produced by the home gateway device.

7. The access server device of claim 5, wherein the information represents data in a prescribed format which is
10 transmitted from the second communication device to which the prescribed message was transferred and which is applied with a protocol conversion at the home gateway device.

8. The access server device of claim 4, further
15 comprising a unit configured to apply encryption processing or digital signature processing to communications with the home gateway device.

9. The access server device of claim 4, wherein the
20 memory unit is capable of registering a plurality of home gateways.

10. The access server device of claim 4, wherein the access server device is provided by a communication service
25 provider who provides the prescribed access network.

11. The access server device of claim 4, wherein the first interface unit carries out communications with the first communication device through an Internet.
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12. The access server device of claim 4, wherein the second interface unit carries out communications with the home gateway device through a dedicated line.

35 13. The access server device of claim 4, further

comprising:

a database unit configured to register data containing a control screen of each home electronic device that can be connected to the registered home network; and

5 a search unit configured to search through the database unit for data of an inquired home electronic device;

wherein the second interface unit also receives an inquiry message regarding an unknown home electronic device
10 from the home gateway device, and returns a response message containing data of the inquired home electronic device obtained by the search unit in response to the inquiry message to the home gateway device.

15 14. The access server device of claim 4, further comprising a proxy unit configured to carry out a proxy server processing with respect to an access from the registered home network to outside of the registered home network, on behalf of each home gateway registered in the
20 authentication table.

15. A home gateway device to be provided at a home network, comprising:

an interface unit configured to relay communications
25 between the home network and a prescribed access network;

a registration unit configured to register an access server device in charge of access control for the home gateway device, with which communications are possible through the prescribed access network; and

30 a control unit configured to handle accesses from outside the home network by permitting only those accesses which are made from the access server device which is registered by the registration unit in advance.

35 16. The home gateway device of claim 15, further

comprising a processing unit configured to transfer a prescribed message received from the access server device when an access made from the access server device is permitted, to a destination communication device on the
5 home network after applying a protocol conversion according to a protocol of the home network.

17. The home gateway device of claim 16, wherein the interface unit relays AV data of a prescribed format
10 received from the destination communication device after transferring the prescribed message to the destination communication device, to the access server device; and
the processing unit applies a prescribed conversion processing to the AV data to be relayed by the interface
15 unit.

18. The home gateway device of claim 15, further comprising a unit configured to return a home page containing contents regarding devices connected to the home
20 network in response to a prescribed message received from the access server device when an access made from the access server device is permitted.

19. The home gateway device of claim 15, further
25 comprising:

an automatic configuration recognition unit configured to carry out an automatic configuration recognition with respect to the home network, transmitting an inquiry message regarding an unknown device or service when the
30 unknown device or service that is not registered in advance is detected on the home network as a result of the automatic configuration recognition, and receiving a response message containing data regarding the unknown device or service inquired by the inquiry message from the
35 access server device.

20. The home gateway device of claim 15, further
comprising a unit configured to apply encryption processing
or digital signature processing to communications with the
5 access server device.

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